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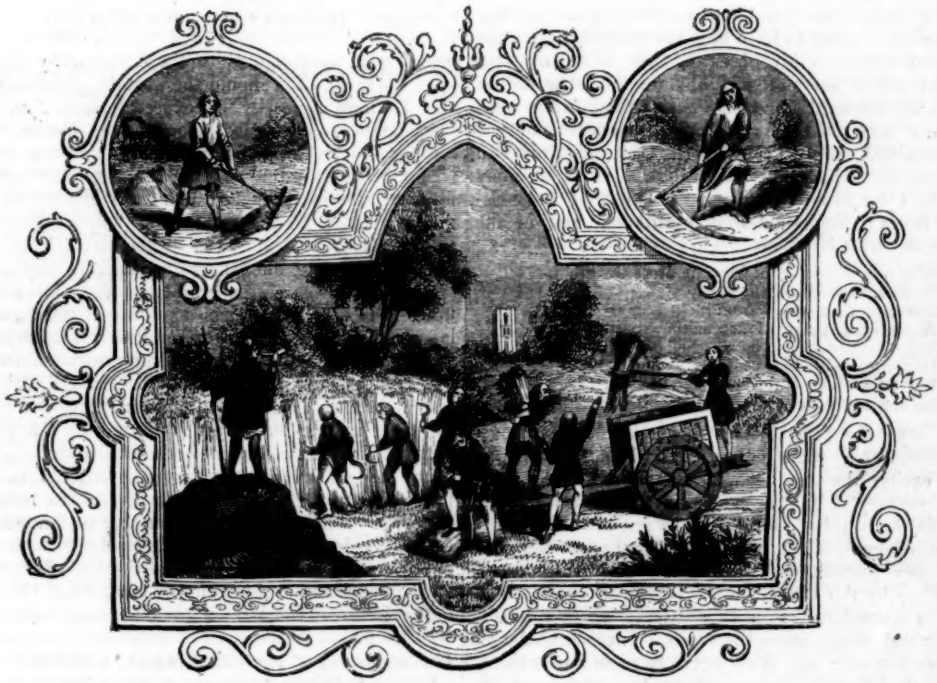
BRITISH AGRICULTURE.

JULY



[Saxon Agricultural Emblems for July.—From Cotton MS., Claudius, B. 5; and Lansdowne MSS., 381 and 383, in British Museum.]

In introducing the subject of hay and hay-making, we shall offer a few observations upon the irrigation of meadow or grass lands; for we have often borne witness to the indifferent management of farmers in this respect, indeed quite as much so as anything we remember to have noticed in arable farming.

It must be understood, that when we speak of irrigation, we refer exclusively to old grass-lands; for as regards what are termed artificial grasses—from their not being indigenous to our soils in general, and from their being for the most part cultivated upon arable lands, where they are sown along with corn-crops, and afterwards allowed to stand for one, two, or more years—there is not so much danger of any extraordinary mismanagement. It is a well-ascertained fact, that upon most meadow-land, irrigation, where it is practicable, is one of the simplest and cheapest modes of improving grass-crops; but partly owing to its principle not being generally understood, and partly where adopted not being properly attended to, much less benefit is derived from the system of watering grass-lands than might reasonably be expected. Ignorance, we believe, has much to do with the bad management we allude to; for we have met with many a farmer possessed of a tolerable share of general intelligence respecting agricultural affairs, who seemed not to be aware that water, pure and simple water, constitutes so necessary and material an item in the food of most sort of grasses and common plants. The drainage of the farm-yard or dunghill they seem to consider as beneficial to grass, because they naturally partake of the nature of the substances they come in contact with; but how simple water can be fertilising, they appear not to entertain the remotest idea. But water, when applied to meadow-lands, like the wholesome drug of the apothecary in complaints incident to the human frame, may be administered in too copious doses; for where a moderate quantity would produce the desired effect, too large an application would have an opposite tendency. Thus it is with many meadows that are laid under water (or flooded) the whole winter, or over which copious streams are allowed to flow for several months in succession; for the effect of such a long immersion is certain destruction to many of the better and finer qualities of grass; and should their places be at all supplied with other plants, they are sure to be of a coarse and inferior description. Indeed it often happens that the entire crop of grass treated in this manner will be rather diminished than increased in quantity, and the quality is certain to be greatly deteriorated: an occasional overflowing would have produced the wished-for result, for the crop would have been increased without its quality being at all impaired. Regarding

springs and small streams, how often do we see them allowed to meander in devious shallow channels, or mere ditches, from meadow to pasture, and from hill to dale, without a drop of their water being turned to a profitable account, notwithstanding field after field might have been irrigated at a trifling outlay of labour or expense. On the contrary, we have witnessed the most insignificant (in regard to size) runs of water conveyed with great care from a considerable distance, for the sake of making their waters available to the purposes of irrigation. Where the situation is favourable, that is, a moderate slope or descent in the surface, it is really surprising to witness the considerable extent of ground that the smallest runnel may be made to water, by a judicious opening of slight artificial trenches in sundry directions, so that every part of the meadow may, in due succession, share the benefit of the enlivening and fertilising influence. Among the ancients it seems to have been the practice to irrigate their corn-fields. Pliny observes, that in a particular district where it was practised, the water destroyed the weeds and nourished the corn. When the Persians were masters of a considerable part of the adjacent countries, they permitted those who conveyed a spring of water to any place which had not been watered before, to enjoy the benefit for five generations. Virgil, in his 3rd 'Eclogue,' refers to the irrigation of meadows; and in the 'Georgics,' book i., he says:—

"Why sing of him, who, when he drops the grain,
Pursues the ridges of the sandy plain:
The water then entices from its bed,
While rills in trickles follow as they're led:
And when the ground its scorched condition shows,
Its herbage withering while the summer glows;
Lo! from the brow of some declining hill,
He draws in streams the gentle-winding rill."

The hay-harvest, or season of hay-making, is, amongst the various occupations of the husbandman, the period which excites the most general interest throughout the whole country. Neither seed-time, the turnip-season, nor even the corn-harvest itself, is by any means so general and common to every district; for the traveller may visit many parts of the country where not a furrow is turned up by the plough upon scores of small grass-farms in immediate connection with one another, where, as a natural consequence, there can be neither seed-time nor corn-harvest: but in respect to hay and hay-making, the case is different; for notwithstanding there may occasionally be found arable farmers who cut but very little grass, yet, under the improved system of farming, where the artificial grasses have their places assigned them in the rotation of crops, most of the farmers make (at the least) as much hay as is necessary for the consumption of their own farm-stock. Such being the case, hay-making is a more general business, while it lasts, with the whole agricultural community, than any other whatever; and although the mere operation of cutting down the grass, and afterwards making it into hay, would seem to be a matter so common and simple, it is a little curious to find the inhabitants of different parts of the country using different sorts of implements and adopting contrary processes to those that are practised elsewhere. This, however, should be understood as applying more particularly to old meadow or natural grasses: as regards new or artificial grasses, a more general plan seems to have been adopted; for since their nature and properties have been carefully examined into, in order to ascertain their respective values to the agriculturist, the best period for cutting them when intended for hay, and the process best adapted for curing the hay under ordinary circumstances, have now been pretty generally determined and acquiesced in.

Soil, situation, and climate, undoubtedly, have a very considerable influence in bringing the farmer's crops to maturity, and yet the period at which our grass-crops should be submitted to the scythe seems to be regulated by various and conflicting opinions; for even in some of the midland counties, including a portion of "the sunny south," we find the meadows remaining uncut at a period when the more northerly and bleak districts of country are busily engaged in securing their crops of hay. The present month, however, taken generally, may be considered as the busiest time of hay-making; for while in warm and forward situations we find much of the artificial grasses, as well as the old meadows too, cut and sometimes carried during the latter part of June, yet, even should the weather prove favourable at that early season for hay-making, the greater bulk of the crop is usually carried to the stack or mow during the month of July.

In the grazing and dairying districts, where the farm-stock is wholly, or nearly so, subsisted upon hay, and where the crops of grass are commonly heavy, a vast deal of labour is necessarily devoted to this object; for with several additional hands to those ordinarily employed upon the farm, even should the weather prove as favourable as may generally be expected, four, five, or six weeks are often consumed before the hay-harvest is fully completed. In some of our mountain and dale districts, when the summer proves rainy and unsettled, the small farmers, who do not incur much extra expense in wages, may frequently be seen engaged in hay-making so late in the season as the month of September. On the whole, however, they are often losers by making hay so out of season; for although the grass that has remained uncut until it is old and sapless may not require so much labour in the curing, in quality it is hardly superior to straw; and besides the ground being greatly impoverished by permitting the plants to mature their seed, there is no second crop to afford pasture for milch-cows and other cattle during the latter part of autumn, when the summer pastures have become exhausted; besides which, from the general want of covering, should the winter prove severe, the future crops will in some measure be injuriously affected. Notwithstanding the practice is so frequently departed from, there seems no doubt that to cut the grass before it ripens its seed is by far the better and more profitable plan; and in most cases a little extra outlay in wages would be advisable among those farmers who are mostly in the habit of only employing their own families during "hay-time," which, with them, signifies a term of indefinite length; for should the season prove unfavourable, from their being able to turn out only a small force on favourable days, or portions of days, they are less able to take advantage of short gleams of sunshine; the grass is consequently longer exposed to the rains and dews before it is made into hay, and thereby greatly injured in quality; and should there be other necessary farm-labour requiring the husbandman's care and attention, the protracted term for securing his hay often causes serious neglect somewhere. Tusser, whose ideas in most matters of this sort are remarkably correct, thus introduces the subject of hay-making:—

"Go, muster thy servants, be captain thyself,
Providing them weapon, and other like pelf;
Get bottles and wallets, keep field in the heat,
The fear is as much as the danger is great.

With tossing and raking, and setting on cocks,
Grass lately in swathes is hay for an ox;
That done, go and cart it, and have it away,
The battle is fought, ye have gotten the day."*

Hay which is intended to be fed to cattle or sheep may be gathered in somewhat earlier than that intended for horses, for should it get a little hotter than desirable in the stack or mow, and become partially what is termed mow-burnt, it is not the less acceptable to them; for the slight fermentation that takes place by a moderate overheating produces a sweetness that they seem to relish: but when intended for horses, it cannot be too thoroughly

* 'July's Husbandry.'

cured before it is brought from the field. If, however, it should be collected into large quantities before the juices are tolerably dried up, or with a portion of rain-water amongst it, there will be danger of its taking fire in the mow, or of its becoming mouldy and rank in flavour.

Hay-making is one of the few out-door employments that, in most parts of the country, we still find females taking a part in; and which, if they are to be employed abroad at all, the cleanly and wholesome nature of this occupation renders it above all others the fittest for their lending their assistance. But some of the operations attending hay-making are of the severest kind, and never attempted by females or children: of these may be mentioned mowing, and forking or pitching the hay when cured, both to the cart and the mow; while other parts of hay-making (except where the grass is very heavy) are considered such mere "child's play," that we frequently see boys and girls engaged in the hay-field, with their small and light rakes, assisting those who are willing to take upon themselves the more laborious parts of the work.

Amongst all our artificial grasses, saintfoin, formerly called holy-hay, is probably the earliest fit for the scythe, for upon many soils it is allowed to be a little earlier than lucern, or any of the trefoils or clovers. As its cultivation, however, is rather partial than general, this sort of grass can hardly be considered among our common sorts of grasses designed for hay. Saintfoin hay, as well as that made where clover forms a prominent part, has to undergo a different process from the common meadow hay. Hay of this sort, after being cut, is allowed to remain undisturbed in the swath for at the least three or four days, when it is gently turned over in order that the other side may wither and dry for a short time. Should the weather prove rainy after such grass is cut, it may prove necessary to turn it oftener than once, but as the leaves are apt to crumble and break off when dry, by which means the finest and best part of the crop is lost, great care is necessary in mowing it; and for the most part it is never spread abroad, or raked together and made into cocks, like meadow hay; but as soon as it is sufficiently dry and withered, it is carted to the stack or barn, and there carefully deposited.

We will not attempt to detail the various processes adopted throughout the country in converting the grass upon old meadows into hay, for the size and fashion of the implements in use are scarcely in two counties precisely the same. When the crop of grass is heavy, it usually takes about three fine days to dry it sufficiently, by being spread abroad and subjected to the action of the sun and air on each day; and where large quantities have to be collected into one stack or mow, after the crop has become tolerably well withered and dried, it is then made into large cocks and permitted to remain unmolested for several days before it is carted to the stack-yard. In some situations, particularly where the country is hilly, we find sledges employed in carrying the hay to the stack; while elsewhere "sweeps," as they are called, are used in preference to sledges or wheel-carriages in removing the hay from the field to the stack. Sweeps are commonly of very simple construction, being nothing more than two pieces of timber of eight or ten feet in length, curving a little inwards, and connected together by several upright bars of about five feet in height. The hay having been raked together into bulky rows, the sweep, with one or two horses attached to each end of it, is applied to the most distant part of the row, when the boys who ride the horses have to be careful to manage them so that neither end of the sweep gets in advance of the other, for if so, the bulk of the hay would not become collected, as the horses advance, in equal quantities along the whole length of this upright and curved hurdle. Having collected as much in front of the sweep as the horses can draw, the postillions drive off to the place of deposit, and having delivered their cargo without a minute's delay, away they gallop back for another sweep-load.

One of the old modes of destroying weeds, as well as of increasing the fertility of the soil, but which is at present but little practised in comparison with what it was formerly—is that of paring and burning, or burn-baking, as a process of this sort is named in some parts of the country. Previous to the present various kinds of manure becoming so generally in use—partly owing to the wretched condition of most country roads, and the impracticability of cheap and easy conveyance, and partly to the then indifferent system of farming—paring and burning was very much in fashion, not only on moory, waste, and such soils as were overrun with weeds and rubbish that were otherwise exceedingly difficult to subdue, but even upon almost every description of land, without almost any reference to the quantity or quality of the soil, a portion of which by this process became reduced to ashes, and was for ever lost in a great measure however inconveniently or disadvantageously a portion of it could be spared. Tenant-farmers, to be sure, who occupied their farms upon short leases, or held them from year to year, seem to have been the only individuals who could with any degree of plausibility adopt a practice that must in the end, according to the very nature of things, prove ultimately injurious to all such lands as already possessed but a scanty soil; for persons the most prejudiced in favour of the paring and burning system could not but admit that at each time the surface of the soil was pared off, either by the paring-spade or paring-plough, and afterwards reduced to ashes, that a portion of the surface soil, which is usually of the best quality, was necessarily destroyed; for although the ashes might have the effect of acting favourably as a manure, and thereby the present crop would be increased, a few repetitions of the same thing must inevitably reduce the soil so materially, that in many cases little but the subsoil would be found remaining. In some situations, and under particular circumstances, however, the practice may be, and still is, pursued to advantage, even when the theory of cultivation is so much better understood, and when roads and water-communications have been so much extended and improved, that manures, of one sort or another, may be easily procured by the great body of agriculturists all over the kingdom.

But besides the object of fertilising the soil through the means of reducing a portion of it to ashes, another consideration, and certainly the more weighty one, was that of destroying the weeds, rubbish, &c., that, from various causes, had obtained possession of the surface of the ground to such a degree, that some extraordinary means had become necessary to eject them and reclaim the soil upon which they grew. In many such cases paring and burning was the process of all others the very best that could have been devised; and even at the present day is often adopted as being decidedly the best plan that can possibly be pursued.

In the West of England, particularly in Devonshire and Cornwall, burn-baking, often called Devonshiring, used to be very generally practised. But this operation is somewhat differently performed to paring and burning elsewhere,—for instead of a breast-plough, push-plough, or paring-spade, as the same implement is called in different parts of the country, a broad mattock or beating-axe is employed in paring off the surface. But previous to the operation of paring being performed, there or elsewhere, it is necessary that the land should be laid tolerably dry, and all stumps and large stones (if any) must be removed, as well as whatever else might obstruct or injure the implements used in pairing off the surface. Even where horse-power is used, and that more modern invention the paring-plough is employed instead of the

spade or the beating-axe, it cannot perform the work effectively where there are large stones, stumps, or roots to obstruct its course.

The operation of paring should be performed during spring,—but not before the ground has become consolidated, and vegetation has made some progress, in order that the parings (sods pared off the surface) should have attained a firm and tenacious consistency, so as not to crumble and fall asunder by any handling they may necessarily be subjected to prior to their being burned. Should the paring be performed during the winter season, or very early in the spring, they become so imbedded in the soil which their original surface comes in contact with, that in order to accomplish their drying during the early part of summer a vast deal of labour is commonly necessary. The paring-spade has a fly-wing, which rises about three inches in height, on the land side, and a wide socket into which a long flat handle is fixed, the upper end being mortised into a cross piece of timber about two feet in length. The man who performs this laborious operation has a small pad or cushion fastened against the lower part of his chest, on the front side of which is fixed a small forked piece of wood, with which he strikes or pushes against the cross part of the handle of the spade—bringing the whole weight of his body to force it forward, the cushion preventing the force of the blows from injuring his chest. The usual breadth of the spade is about twelve inches. When the ground is free from stones and other obstructions, so that he can keep the edge of his spade sharp and in good condition, at each push of his body he will probably be able to advance it six, eight, or ten inches—according to the nature of the soil and power of the stroke,—advancing his feet alternately, until the sod or paring be about two feet or two and a half feet long; when, by lifting the spade up on its edge, which he is enabled to do by means of the cross part of the handle acting as a lever—depressing one end with his left hand and elevating the other with his right, he manages to turn the paring over upon the grassy side, and in this manner he continues until he gets to the end of the piece of ground he may have marked out as "a land," returning to the place where he had commenced, so that the parings all lie in rows, like furrows turned one against the other in the ordinary mode of ploughing.

Moor-lands or waste-lands, or indeed commonly any other lands, are pared during the spring, and the sods, if possible, are reduced to ashes during June or the early part of the present month, in order that a turnip crop may be got in ere it be too late in the season. When the turf is coated with heath, moss, dead coarse grass, or any other rubbish, and the season proves tolerably dry, the parings are frequently burned off without even the trouble of turning them over, or using any other means to perfect their drying; but in wet seasons it is a very difficult matter to get them into a fit state for burning, and to effect this is sometimes quite impossible. When the sods become sufficiently dry, they are piled up in moderate sized heaps —the grassy side inwards, and as the fire consumes the inner portion of the piles, more sods are heaped on according to the force and rapidity with which the fires seem to burn. The heaps, however, ought not to be made too large, for the double convenience of not having the sods far to take when piling them up, nor the ashes far to remove when spreading them upon the ground, since they should be scattered equally over the entire surface. During the operation of burning, a constant attendance is absolutely necessary, in order to keep the fires going, and to get the fag-ends of the sods all completely reduced to ashes. As early as possible after this operation has been performed, the ashes should be spread over the surface, and immediately ploughed under, with as light a furrow as practicable; and after the harrows have partially broken up the furrows—without reducing the soil to a very fine tilth, the turnip-seed is sown broad-cast; and should the weeds, &c. that infested the soil have been wholly destroyed by thus paring off the surface, even upon light and very indifferent qualities of soil, large crops of turnips are often got without almost any further trouble. However, when the ground happens to be a portion of waste and almost worthless common, in addition to the ashes which may be made by burning off the sods, a moderate sprinkling of lime will be necessary in order to ensure a tolerably good crop.

When the paring-plough is used, after it has skimmed off an exceedingly thin furrow, the sods have to be cut across, either by a machine for that purpose, or by a sharp-edged spade. But the operation of cutting them into proper lengths, and the necessity of walking upon them, has the effect of pressing them closer to the damp soil on which they rest, than the sods which are pared with the paring-spade. The cost of paring may be calculated at from twelve to twenty shillings an acre, and the burning at eight or ten, though the latter is a matter of great uncertainty, so very much depends upon the state of the weather. Push-ploughing, or paring with the spade, is one of the most severe kinds of labour that the husbandman is occasionally subjected to; but since it requires some tact and adroitness, as well as great exertion, we seldom find farm-servants employed upon this sort of work, for the farmers find it more to their advantage to let paring out by the piece or the acre to those who understand it, rather than employ their ploughmen, carters, or herdsmen. Where the nature of the ground will admit of it, newly enclosed common or waste lands are first broken up by this system of paring and burning, in preference to any other mode of reclaiming such soils, and it is undoubtedly an excellent means of cleansing such lands from their wild and useless productions, provided the soil will admit of a portion of it being consumed in the burning. But even upon such soils as are of a nature and a depth that the reducing to ashes of a small portion, from time to time, could not possibly be attended with injurious consequences, paring and burning is now but seldom resorted to; for since most of the deep deposits of decayed vegetable matter rest upon a subsoil of clay, that article is therefore easily procured, and alone, or in connection with lime, forms so useful a manure, that when properly applied its beneficial effects extend to several succeeding crops.

In many parts of the country where the land is cold and clayey, and of a poor quality, it is customary for the farmers to dig up the soil upon the head-lands, and to enlarge the ditches adjoining the fences; and, taking advantage of some droughty spring or summer, pile the whole up in long heaps which they manage to reduce to ashes; and being afterwards spread over the adjoining lands (though such ashes contain but little salts or fertilising qualities), by being ploughed in and well mixed with the soil, for a time they undoubtedly improve its quality. It is a pretty general opinion that ashes, particularly such as contain much vegetable salts, ought to be spread upon the ground and mixed with the soil as quickly as possible after the burning has ceased; but if they are carefully piled up in compact heaps, as soon as the first rains fall a crust will be formed outside the heaps, which will completely protect the remainder for almost any length of time; so that should the sods not get burned off in due season for getting in a crop of turnips, the ashes will remain in this state uninjured until the wheat or other autumnal crops are ready to be committed to the soil.

Regarding ashes as a manure generally, the opinions of eminent agriculturists are so much at variance, that it still seems a matter of considerable doubt how far such opinions may be depended upon. Kirwan, in his 'Treatise on Manures,' observes, "that *burning* converts vegetables

and other roots into coal: to preserve this carbon a gradual smouldering fire is the best. The danger to be apprehended from this practice is the husbandman's not pursuing an ameliorating system of crops afterwards: the custom is a very ancient one, and even from the most depraved practice, the ground perhaps in no instance has become effete. There seems to be little doubt of its being the best mode of breaking up a rude untouched soil: care should be taken to penetrate sufficiently deep to destroy the long roots and fibres." In Italy and some other southern parts of Europe, the farmers, even to the present day, practise the ancient custom of burning the stubbles; a custom, however, which certainly indicates but an indifferent system of agriculture.

> " The peasant oft his barren field has turned,
> And, as he raised the turf, its surface burned,
> And to the stubbles spread the crackling fire,
> Which shrink to nothing ere the flames expire."*

Since experience in matters of this sort is usually considered the safest and best teacher, a few observations of our own, upon the subject of ashes when used as a manure, may not be considered as irrelevant to our subject. Turf or peat ashes, when applied in large quantities as a top-dressing for grain or grass crops during the spring, from their peculiar heating nature are frequently found acting injuriously; whereas the very same quality of ashes applied in moderate quantities to the same sort of crops is generally found to answer a very good purpose. When meadows are manured with ashes, the effect seems to depend, in some measure, upon the wet or dry state of the season which follows; for where the soil is naturally moist or inclined to wet, and a rainy summer follows the application of ashes in the spring, the quality of the herbage is often deteriorated, although the quantity may not be lessened, since dwarf rushes, wild-sorrel, and other plants of a worthless description are considerably increased; while if the ashes are applied to dry and warm soils, and the summer should prove droughty and warm, although the quality of the herbage may be improved, the quantity, in all probability, will scarcely if at all be increased. Coal-ashes are less effective than those produced by the burning of turf or peat; nor are soap-ashes, unless more lime than ordinary has been used in the soap-manufactory, now in much repute with the farming community. Soot is a far more valuable manure than any sort of ashes, since the same bulk of it contains a much greater quantity of those fertilising properties than exists in any description of ashes; but it is of a somewhat heating nature, and therefore has to be cautiously and judiciously applied. During the spring, should the weather be favourable, it may be advantageously used upon such young wheat crops as may have suffered from the effects of a hard winter; and when old meadow-lands become mossy and hide-bound, no manure answers a better purpose than soot when applied in moderate quantities. It possesses this advantage among others, that a small cart-load of twenty or thirty bushels will generally be found sufficient to manure an acre of ground, and will often be found to answer a better purpose than when a much greater quantity is used.

Cole or rape—or cole-seed or rape-seed, as a crop of this is often provincially called—is now but little cultivated as a general crop, in comparison to what it was a century ago; owing, in a great measure, to the more general introduction of other useful productions, but more particularly turnips, tares, or vetches, and those artificial grasses that are now raised as a supply of succulent food for farm stock at that season of the winter and spring when the natural grasses of our meadows and pastures afford but a poor pittance to milch-cows, ewes, and lambs, or fat stock generally. It is nevertheless cultivated by the farmers in some parts of the country, but generally more for the seed than as a green crop, although but few crops yield a larger quantity of green food than does a tolerably good one of cole or rape. When it is allowed to ripen its seed—which it commonly does in the early part of the present month (July)—the seed is thrashed out and sent to the rape-mill, where that coarse kind of oil called rape-oil is extracted from it, and the residue is put into moulds and made into those cakes called oil-cake, so much in use in many parts of the country among those who fatten considerable numbers of cattle. It may be remarked, however, that the beef of the cattle that partake largely of oil-cake is by no means of the finest quality, for besides the fat being of an oily nature, a somewhat strong and unpalatable flavour is imparted to the whole; but when given to farm stock in small quantities, the flesh of such cattle is not at all injured. This great consumption of oil-cake (a portion of which is, however, made from linseed) amongst the farmers, may fairly be taken as a proof of its high repute as an article for fattening stock, although but comparatively few individuals now-a-days devote their attention to its cultivation upon their own farms. But one great reason for this, and probably the chief one, is the moderate rate at which it can be purchased in almost any part of the kingdom, since vast quantities of this article are imported from some of our continental neighbours, where both land and labour are cheaper than they are in this country, and where the soil is favourable to its growth.

The most common season for sowing rape is during this month: if sown earlier, it is apt to run to seed before checked by winter frosts; and when put into the ground later, it does not yield so large or good a crop. The most indifferent portions of most farms where cole-seed is cultivated are selected for that purpose, and commonly those that are inclined to be moist and wet; for on a dry and sandy soil, without a liberal allowance of manure, which is rarely bestowed upon it, large crops are seldom raised, the tap-roots requiring a considerable depth of soil to strike into. Where paring and burning are still practised, rape is occasionally cultivated instead of turnips, particularly in those districts where the soil is of an indifferent quality. Since the drill husbandry has become so general, we now find some of the crops of rape cultivated in rows or drills; but upon moory or newly broken up land the broadcast system is still pursued, and apparently with advantage. The seed is small, and resembles that of turnips, as do the young plants for awhile after they first appear; but the roots are seldom found of a bulbous shape; and, where the situation will admit of it, they strike deeper into the ground than almost any other crop cultivated by the farmer: hence rape is generally considered a great impoverisher of the soil. The plants will bear moving very well, so that it is sometimes sown in beds, and afterwards transplanted out for a general crop.

In a deep and rich soil rape grows very rapidly and luxuriantly, where many of the plants will attain the height of three feet and upwards. The plants should have plenty of room in every direction, since they send forth a number of collateral branches, all of which throw out numerous blossoms, and afterwards bear seed. It is of so hardy a nature, that the severest winters we experience scarcely ever injure crops of rape. It is the common custom to turn in flocks of sheep among the rape during the winter months, by which means the entire crop is eaten down, and nothing remains visible but a few inches of the hard and fibrous stalks. However, with the earliest mild weather when winter breaks up, the remaining stumps begin to show new sprouts, though it usually happens that many of the stalks that have been much bruised and gnawed rot down to the surface, and never more shows signs of vegetation. When the crop is cut for soiling cattle, this does not happen; and where a full crop of seed is considered of the first importance (which undoubtedly is the case with rape crops generally), it

* Virgil: 'Georgics,' book i

sheep are allowed to eat of the crop, the bruised parts of the stalks should afterwards be cut away with a knife or other sharp instrument, in order to ensure the re-sprouting of the plants. By the beginning of June fields of rape which have been treated after this manner will be in full blossom; and a month or six weeks after, the seed will be ready to gather in. It is a well-ascertained fact that sheep will fatten quicker upon rape than upon common turnips, and that a very small quantity of hay is all they require while fed upon it. Mr. Baker, in an essay on the culture of rape or cole, makes use of the following remarks:—"Cole-seed is one of the most profitable common crops known in England, but not for feeding cattle, nor should I have conceived that any persons could have thought of comparing it with turnips in that light. The profit of the crop is the seed, which amounts to five times the value of any food for cattle that will ever be gained from it. . . . But if the plant be applied to the same use as turnips, and used at the same time, it is agreed throughout the kingdom that the culture is worthless, not producing near the quantity of food with that crop, nor paying in any respect so well." Mr. Young, after he had seen much of it cultivated in various parts of the country, and after trying several experiments upon his own farm, speaks of it as follows:—"Respecting the culture of cole-seed merely for food in April and May, that is, to succeed turnips, there is one strong reason against it, which is, its not producing a great weight of food per acre. I know, both from my own and others' experience, that the weight of food is trivial compared to that of turnips and cabbages, &c. I will venture to say not an eighth part, consequently much land must be appropriated to this use; and after the season in question, what quantity of barley or oats will be gained? The sowing will be in May: now it matters nothing to inquire into culture or any other circumstances; it is clear enough that the spring corn crop is ruined by late sowing. Hence arises the necessity of the spring food yielding a great quantity on a small space of land, that the farmer may experience this evil only in a small degree. Cabbages, which yield as much food on one acre as ever cole-seed will on six, appear to come infinitely nearer the wished-for mark."

The harvesting of a crop of rape-seed is one of the most curious and interesting scenes connected with the whole system of arable farming. When the seed is nearly ripe, the plants are carefully cut, and laid in heaps or "reaps," in a particular manner, where it is suffered to remain undisturbed until it is considered sufficiently ripe for the thrashing; for it sheds its seed so readily, that great care becomes necessary in order to avoid a considerable loss. This being the case, large cloths, especially for the purpose, are brought to some convenient part of the field where the thrashing is to take place—the usual size of a cloth for this purpose being about twenty yards long by eighteen wide: but to such as have never personally witnessed an operation of this sort, we fear that the limited space we may be able to devote to the subject will hardly be sufficient to render the matter perfectly intelligible. The cole-seed sale, as the thrashing out of the rape-seed is usually designated, is mostly performed by active persons, and such as perfectly understand the business: and should the weather prove fine—which is absolutely necessary for the proper performance of the business, a more lively and exciting scene can scarcely be witnessed, the performance being usually concluded by the party partaking of a good supper and plenty of strong beer.

The number of persons employed at one of these cole-seed sales (rape-thrashings) is about twenty: when the crop is a full one, seven gatherers are selected; but if it is but thin, nine or ten are required. Some of these are women, and often two or three of them stout boys or girls. Not being able to get their arms round the bundles or reaps, each gatherer uses a sickle to enable him to lift the bundles without crushing out the seed, and putting the sickle carefully under the heap of stalks as it lays upon the ground, and assisting to steady it with the other hand, it is lifted and gently deposited in the bearing-sheet, of which there are two belonging to a party of rape gatherers. Each of these is about ten feet long and seven wide, with hoops at each side, through which a light pole is put, and it is carried when filled to the thrashing-cloth by two men, who are called bearers. The bearers having deposited their burden, another man, called a layer-on, places the rape in rows across the main cloth for the thrashers, who are four in number, to operate upon; two of them standing on either side. While the thrashers, who ply their light flails briskly, are engaged in thrashing the first row on the floor or cloth, the layer-on deposits another row at a proper distance from the first, and when the second row has been thrashed once over, they turn to the first and thrash it over a second time. Having performed their parts, two other men, called shakers-off, follow the thrashers, the first of whom throws up the stalks or straw, and while it is up the other strikes it in order to dash out any seed which may still remain, being provided with peculiar shaped wooden forks for that express purpose: they then with their forks throw the straw over the bolster (as it is called) of the floor-cloth to a person whose business is to remove it, and who is named the sack or shake-straw. After the shakers-off follow two persons—one of them commonly a woman, who take off the pods, or "coshes," with rakes for that purpose—being named, according to their respective places on the cloth, the before and behind cavers. The behind caver must be a person both strong and active, in order that his duties may be performed effectively; for upon him the saving or throwing away of a good deal of seed depends. When the weather is favourable, and the crop a pretty good one, a party of this description, who well understand the business, will frequently thrash out a hundred bushels in the day; but fifty or sixty bushels may be considered a day's work where the crop is but an indifferent one, and where it does not thrash out easily. The seed is afterwards dressed or winnowed, and carted off to the granary or the oil-mill.

In many parts of the world the seasons are so regular, and the atmospheric changes so distinctly marked, that the inhabitants are able to calculate within a very few days when the periodical rains will commence and cease, and when the winds, that may have prevailed for several months, will veer around, or altogether cease blowing. Where the seasons are thus regularly established in their character, the cultivators of the soil must necessarily be the better able to make their calculations respecting the amount of labour to be performed before any stated period; and they must also know, that should they omit taking advantage of the proper season, they afterwards will have no chance of redeeming lost time. The humidity as well as the variableness of the climate of Great Britain has long been proverbial; but notwithstanding this state of uncertainty, and the natural sterility of the soil in many parts of the country,—capital, enterprise, industry, and perseverance have combined in raising our agricultural celebrity far beyond that of more favoured neighbouring nations, or, indeed, of any other country upon the face of the habitable globe. How patriotic and faithful is the poet's description when he says,—

> "England! . . . . . Though thy clime
> Be fickle, and thy year most part deform'd
> With dripping rains, or withered by a frost,
> I would not yet exchange thy sullen skies,
> And fields without a flower, for warmer France
> With all her vines; nor for Ausonia's groves
> Of golden fruitage, and her myrtle bowers."*

This peculiar changeableness and uncertainty respect-

* Cowper: 'The Task.'

ing the weather, and what another day may bring forth, strongly tend to render it almost necessary, or at least very desirable, for the husbandman to keep some account —some register in his memory or otherwise, of the state and character of the various past seasons, with their general effects upon crops and vegetable productions, as well as upon the state of the markets. It is only from past experience that the foundation of a thorough practical knowledge in farming matters, as well as in matters of business generally, can be laid. Such being the case, we do not know how we could devote a page or two of our present number to a better purpose than that of taking a retrospective notice of the past six months of the year; and we would suggest to those who feel an interest in agricultural affairs, that, at the expiration of each month, they should take the trouble to note in some memorandum-book a few of the most striking and influential features of the month, with the prospects and appearances of the various products of the country at the time; since by so doing, in after-years it will not only be amusing to refer and compare, but often prove advantageous to have such precedents of past years from which to draw deductions and inferences concerning the future.

January.—At the commencement of the year the country was still suffering from the effects of the long continued rains during the latter part of summer and the greater part of autumn; for there had been but little dry weather, with scarcely any frost, so that the lowlands and wet soils were still in such a condition as to prevent the work from being completed, which, in more favourable seasons, properly belonged to the autumnal quarter of the year. Except in very unfavourable situations the turnip-crop had not materially suffered, and upon the whole they stood tolerably through the month, though the season was a trying one for sheep, particularly in the low and marshy countries, where the loss was very considerable. Once or twice during the month appearances indicated the setting in of frost,—but although the clouds cleared away for a day or two, the wind veered back to the south and west, and brought a return of damp and gloomy weather. During the early part of the month, the cart and the plough were not in general use except upon upland farms and light and dry soils, so that the farmers were by no means ahead of their ordinary business at this season—so much having been left undone during the latter part of the year. By the end of the month, however, team-work had made considerable progress.

February.—In the early part of this month a seasonable and rather keen frost set in; and although it was neither of long continuance nor accompanied by a fall of snow, it answered the purpose of checking premature vegetation, of destroying vermin and reptiles that infest the fields and the gardens, and producing a beneficial effect upon such soils and substances as require the action of frost upon them in order to reduce them to the most favourable condition. In some situations, however, where the ground had not got dry and settled, the young wheats suffered to some extent, a misfortune which is always to be apprehended after a very rainy season. After the breaking up of the frost, the weather continued dry upon the whole, so that before the month was out the farmers had made such progress in their various labours, that there seldom has been a corresponding period in which farming business had progressed so rapidly. By the middle of the month, in favourable situations, the ground was in a condition to receive the seed; and when March came in, many of the early spring crops were already in the ground. From the 18th or 20th to the end of the month, the wind continued northerly and easterly, though by no means cold for the season.

March.—As February ended, so this month began, dry weather and easterly winds still prevailed; so that the land which had been flooded, or too wet to receive the crops of wheat in the autumn, were now in a condition to be sown with spring-wheat, barley, beans, peas, or whatever else was considered to best suit the views of the farmer. Indeed the soils in general became so dry, that it was a difficult matter to work the stiff clays; and as for March dust, which is said to be so invaluable to the agriculturist, it probably was never known to be more abundant. Although what still remained of the turnip crops when March came in was of no great extent, the steady fine weather, with but little rain or frost, was the means of their answering a better purpose than a much larger quantity is often known to do under less favourable circumstances. With the exception of two or three slight changes during a day or two, the whole month might be called dry; and during more than four-fifths of the time the wind was easterly inclining to the north. The dry state of the soil and the prevalence of easterly winds retarded vegetation, although neither winter nor spring grain suffered materially for want of rain. As the end of the month approached, the pastures and meadows, even in the warmest situations, had scarcely begun to look green; while the tares and early grasses that are looked forward to for supplying the place of turnips at this season, were, on the whole, in a rather backward state; and it became a general prognostic among the weather-wise farmers, that we should have a late spring.

April.—After this month came in, the dry weather still continued, and for some time the weather was rather cool for the season, slight frosts frequently occurring during the nights. As the month advanced some parts of the country were visited by partial rains,—and although the wind occasionally veered round to the west, it presently got back again to the north and east. By the middle of the month the weather had become more like June than April; for the sun shone clear and bright for many days in succession, and although the wind was rarely southerly, the power of the sun's rays became almost oppressively hot. Notwithstanding this, vegetation did not advance rapidly, owing to the remarkably dry state of the soil, and the general want of rain, for with the exception of a few slight or irregular showers, none had fallen for the last two or three months. The grain-crops, in many situations, began to lose their colour for want of rain; but on moist soils the thin wheat-crops now began to cover the ground much better than had been predicted; and what was somewhat remarkable, even on dry meadows and pastures, where the grass seemed to grow but slowly, there were no appearances of drought, or of the roots being in any degree affected. Never was there a more favourable season for getting the turnip and potato grounds into excellent order, and fallows in general were in a state of great forwardness before the month expired. In some parts of the country hay became scarce, and the consequence was, as is invariably the case, farm-stock was turned into the pastures to seek a maintenance long before the period they ought to have been. During the preceding month, a disorder among milch-cows had become pretty general, particularly in large dairies, which continued during the present month: in the metropolitan dairies there was so great a mortality among the cows, and falling off of milk, that it became difficult to meet the demand.

May.—When this month commenced the general prospects of the farmer were not upon the whole so favourable as so long a continuance of fine weather would naturally have led one to expect. It is true that a finer season for preparing for summer crops had never been known, but neither the winter nor spring crops were in that forward and flourishing condition that they frequently present at corresponding seasons of the year. However, all that appeared wanting was rain, accompanied with warm weather, and scarcely a week had elapsed before the light south-western breezes brought with them gentle and refreshing showers; and before the second week

had ended, the ground had everywhere been saturated with an abundance of rain. The progress of vegetation was never more rapid or remarkable, and it presently became quite evident that grass would be pretty abundant—and quickly too, for it now shot up apace. About the middle or somewhat later in the month, the weather became colder, and frost was apprehended, but, fortunately, neither the fruit-trees nor any other part of vegetation suffered in this way, for warm weather and fine showers presently followed. By the end of the month the early grasses were, many of them, nearly ready for the scythe; and the old meadows showed evident indications of early crops. The young potato crops, too, looked remarkably promising, and the Swedes were got in in good condition; so that when the month closed there was not any appearance of a failure among the whole range of farm produce. The wheat, which had suffered early in the season, continued to improve as the season advanced; and, with the exception of the hop districts, where the fly had made its appearance in many places upon the bines, the farming interest had nothing to complain of.

June.—This month had scarcely set in when the mower's scythe was already abroad in many of the southern counties, as well as in fertile and forward situations elsewhere,—even in many where the cutting of grass is seldom begun until the latter part of the month. Not only were the new lays generally attacked, but the old meadows were likewise entered upon. In the district surrounding the metropolis, as well as some others, the crops were found lighter than had been expected; for the month of May had been so remarkably favourable to vegetation, and the meadows had improved so rapidly, that heavy crops were naturally looked for. It would seem, however, that the previous long period of warm and dry weather had so effected the grass-plants, that when rains at last fell, the growth of them was so vigorous and rapid, that they shot up their seed stalks, and approached maturity earlier than had been anticipated, and before the finer species of grasses had made a corresponding progress and filled up the vacant spaces. In the West and North of England, but particularly in the latter, when June came in, the crops generally had scarcely ever been known in so forward and flourishing a condition; and what is but seldom the case—in the valleys of Cumberland and Westmoreland, and the vales of Durham and Northumberland, the crops were almost in as forward a state as in the counties of Middlesex, Essex, and Surrey; and it seems moreover that the grass there is realising all that the farmers had expected of it. Wherever the hay has been carried, as is the case in most of the forward districts, if the quantity has not been large, the quality will amply compensate the grower, since most of it has been got in in excellent condition; for until past the middle of the month, the weather was remarkably propitious for hay-making; and though it then became showery, and continued more or less so until near the end, as the greater portion of the rain fell during the nights, the hay was but little injured, and the work but slightly impeded.

Scarcely could there have been a finer season for the crops of grain, and arable crops generally; for the rains that occasionally fell—not in deluges, but in gentle showers, were precisely such as the farmer desired while his wheat and barley were earing, and his turnips just peeping above ground. It may be generally and fairly stated, that up to the present time the appearance of the country, in an agricultural sense, has but seldom been so favourable.

MONTHLY CALENDAR.—AUGUST—EIGHTH MONTH.

Day of the Month and Week.	Day of the Year.	Sundays and Remarkable Days.	Sun rises.	Eq. Time. Clock bef. Sun.	Sun sets.	Moon's Age.	Moon rises.	Moon sets.
			h. m	m. s.	h. m.		h. m.	h. m.
1 S	214	Lammas Day.	4 25	5 59	7 46	3·6	8m 57	8a59
2 *Su*	215	7 *Sunday after Trinity.*	4 27	5 55	7 44	4·6	10 15	9 11
3 M	216	. . .	4 28	5 51	7 43	5·6	11 31	9 24
4 Tu	217	. . .	4 30	5 46	7 41	6·6	0a46	9 39
5 W	218	. . .	4 31	5 40	7 39	☽	2 1	9 58
6 Th	219	. . .	4 33	5 34	7 37	8·6	3 13	10 24
7 F	220	. . .	4 34	5 27	7 36	9·6	4 20	11 0
8 S	221	. . .	4 36	5 19	7 34	10·6	5 18	11 49
9 *Su*	222	8 *Sunday after Trinity.*	4 37	5 11	7 32	11·6	6 3	morn
10 M	223	. . . [end.	4 39	5 2	7 30	12·6	6 37	0 50
11 Tu	224	Half-Quarter. Dog-days	4 41	4 53	7 28	13·6	7 2	2 0
12 W	225	Grouse Shooting begs.	4 42	4 43	7 26	14·6	7 20	3 16
13 Th	226	*Dow. Q. Adelaide b.* 1792	4 44	4 33	7 24	○	7 35	4 34
14 F	227	. . .	4 45	4 22	7 22	16·6	7 48	5 52
15 S	228	. . .	4 47	4 10	7 20	17·6	8 0	7 10
16 *Su*	229	9 *Sunday after Trinity.*	4 48	3 58	7 18	18·6	8 12	8 28
17 M	230	*Duchess of Kent b.* 1786	4 50	3 46	7 16	19·6	8 25	9 48
18 Tu	231	. . .	4 52	3 33	7 14	20·6	8 42	11 11
19 W	232	. . .	4 53	3 19	7 12	21·6	9 4	0a37
20 Th	233	. . .	4 55	3 5	7 10	☾	9 35	2 4
21 F	234	. . .	4 56	2 51	7 8	23·6	10 21	3 25
22 S	235	. . .	4 58	2 36	7 6	24·6	11 26	4 33
23 *Su*	236	10 *Sunday after Trinity.*	5 0	2 21	7 4	25·6	morn.	5 23
24 M	237	*St. Bartholomew.*	5 1	2 5	7 2	26·6	0 46	5 57
25 Tu	238	. . .	5 3	1 49	7 0	27·6	2 15	6 21
26 W	239	. . .	5 4	1 32	6 58	28·6	3 44	6 39
27 Th	240	. . .	5 6	1 15	6 55	●	5 10	6 53
28 F	241	. . .	5 8	0 58	6 53	1·2	6 32	7 5
29 S	242	. . .	5 9	0 41	6 51	2·2	7 51	7 17
30 *Su*	243	11 *Sunday after Trinity.*	5 11	0 23	6 49	3·2	9 9	7 30
31 M	244	. . .	5 12	0 4	6 47	4·2	10 26	7 44

Meteorological Averages,	
Barometer.	Ins.
Mean height	29·891
Highest	30·260
Lowest	29·350
Hygrometer.	°
Mean dew-point	55·3
Highest	69
Lowest	46
Mean dryness	6·3
Mean greatest do. of day	12·4
Greatest dryness	29
Thermometer.	
Mean temperature	61·6
Highest	82
Lowest	41
Radiation.	
Mean great. of Sun	33·1
Greatest power	59
Mean cold of terrest.	5·2
Greatest ditto	12
	Ins.
Mean qty. of rain	1·453
Mean of evap.	3·327

Table of the Winds.

	Days.	Dew-P.
N.	1	55°·5
N.E.	2¾	53
E.	1½	55 ·5
S.E.	3	60
S.	2¼	63
S.W.	6	58 ·5
W.	11¼	55
N.W.	3	53

SUNDAY LESSONS.

MORNING.

Aug. 2	7 af. Trin.	2 Sam.	21	John	21
9	8 „	1 Kings	13	Acts	7
16	9 „	„	18	„	14
23	10 „	„	21	„	21
30	11 „	2 Kings	5	„	28

EVENING.

Aug. 2	2 Samuel	24	Heb.		5
9	1 Kings	17	„		12
16	„	19	1 Peter		1
23	„	22	2 Peter		3
30	2 Kings	9	Jude		

THE MOON'S CHANGES.

First Quart.	5th day,	5h.14m. mn.
Full . . .	13th day,	7h.15m. mn.
Last Quart.	20th day,	0h.17m. aft.
New . . .	27th day,	6h.44m. mn.

Day of Mth.	Length of Day.	Day's decrease	Day break.	Twil.	Sun's Semi-dil.
	h. m.	h. m.	h. m.	h. m.	
1	15 21	1 30	1 50	10 38	15′ 47″
6	15 4	1 30	1 50	10 18	15 48
11	14 47	1 30	2 8	9 59	15 49
16	14 30	1 47	2 24	9 42	15 50
21	14 12	2 4	2 39	9 25	15 50
26	13 54	2 22	2 52	9 10	15 51

*** The Office of the Society for the Diffusion of Useful Knowledge is at 59, Lincoln's Inn Fields.
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